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ABSTRACT

A study examined the role higher education institutions play through their educational strategy in supporting student retention. Educational strategy was defined as patterns of institutional practices designed to support undergraduate education, and the question posed was: Do the practices a college implements at the institutional level to support undergraduate education have anything to do with its ability to retain students? The practices were aggregated into strategy categories and compared to student retention at 528 four-year and comprehensive colleges and universities. Results indicated that although educational strategy added little to the predictability of retention in the total sample of institutions, it may be that it plays a critical role for those colleges and universities which make a concerted effort to counteract the low retention rates that would follow from their institutional characteristics. For less selective public institutions, the practice of engaging in a broad array of activities that support undergraduate education may be related to improved student retention rates. Contains 28 references. (Author/GLR)

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Linking Institutional Characteristics, Educational Strategy, and Student Retention in Colleges and Universities

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Linking Institutional Characteristics, Educational Strategy, and Student Retention in Colleges and Universities

Abstract

This study examined the role higher education institutions play through their educational strategy in supporting student retention. Educational strategy was defined as patterns of institutional practices designed to support undergraduate education. These practices were aggregated into categories of strategy and compared to student retention at 528 four-year and comprehensive colleges and universities. Results indicated that although educational strategy added little to the predictability of retention in the total sample of institutions, it may be that it plays a critical role for those colleges and universities which make a concerted effort to counteract the low retention rates that would follow from their institutional characteristics. For less selective public institutions, engaging in a broad array of practices that support undergraduate education may be related to improved student retention rates.

Linking Institutional Characteristics, Educational Strategy, and Student Retention in Colleges and Universities

This study is an investigation of the relationships among institutional characteristics, educational strategy, and student retention at 528 colleges and universities. Educational strategy is defined as the patterns of institutional practices engaged in by colleges and universities to support undergraduate education. The idea for this project grew from a series of visits to colleges and universities to examine the educational strategies implemented by these institutions to support undergraduate education. From these visits it was observed that schools that were similar in the institutional characteristics of size of undergraduate enrollment, type, control, and selectivity had very different outcomes, especially student retention rates. These institutions had traditionally committed their resources in very different ways. Some offered a broad array of programs and services to support undergraduate education while others focused their efforts on specific types of institutional practices such as faculty development and student support services. Thus, the question arose: Do the practices a college implements at the institutional level to support undergraduate education have anything to do with its ability to retain students?

THE CONCEPTS OF EDUCATIONAL STRATEGY, STUDENT RETENTION, AND INSTITUTIONAL CHARACTERISTICS

Educational Strategy

The concept of strategy used in this investigation was proposed by Mintzberg and Waters who first defined the concept as "a pattern in a stream of decisions" in order to operationalize the concept of strategy, and "to provide a tangible basis on which to conduct research ... Streams of behaviour could be isolated and strategies identified as patterns or consistencies in such streams" (1985, p. 257).

However, decisions are intangible and unobservable until implemented, "The essence of ultimate decision remains impenetrable to the observer - often, indeed, to the decider himself.

...There will always be the dark and tangled stretches in the decision-making process - mysterious even to those who may be most intimately involved." (Kennedy, J. F., cited in Allison, 1971, inside cover). In a parenthetical phrase, Mintzberg and Waters state "because of practical necessity, we have been drawn into studying strategies as patterns in streams of actions, not decisions..." (1985, p. 257). This interpretation supports Weick's contention that "...an organization can never know what it thinks or wants until it sees what it does. What organizations say and do provides displays that they can examine reflectively to understand what is occurring. Organizations talk in order to discover what they are saying, act in order to discover what they are doing" (1979, p. 195). In other words, an organization's strategy can be inferred from its behavior. The advantage of this approach is that strategy becomes a tangible and researchable phenomenon, an observable product of the stream of actions (Miles and Snow, 1978).

There are two crucial characteristics of this definition, strategy as a pattern. First strategy is viewed as actions that have been taken rather than intended plans about the future. Thus, it becomes tangible and measurable. Second, strategy becomes a pattern of observable activities or practices that are in place as a result of these actions. The interdependence of these practices is essential to understanding strategy. By seeking to uncover a configuration of educational practices among colleges and universities related to different levels of performance, one might discern strategies leading to successful institutional performance. Because these practices are internal and developed and implemented by the institution, they are also controllable. As such, they can be manipulated, changed, thrown out, or added to as the college seeks to improve its performance.

In investigating strategy across higher education institutions, the key areas on which to focus are the elements all higher education institutions have in common: teaching and learning: "Higher education institutions must acknowledge 'explicitly and forcefully' that teaching and learning are their chief occupation and must support steps to improve instruction on their campuses... 'Too seldom is collegiate teaching viewed for what it is: the business of the business--the activity that is central to all colleges and universities'" (Watkins, 1989, p. A13). Thus, an examination of educational strategy becomes an investigation of the patterns of practices

that support the educational process. These practices can be categorized into four groups that define the undergraduate education environment: student-oriented practices, such as counseling and advising; faculty-oriented practices, such as faculty recruitment, selection, and promotion; curricular/technological practices, such as needs assessment, program review, and technology to support instruction and learning; and administrative practices, such as academic planning, institutional research, and resource allocations.

Educational Strategy and Student Retention

Strategy has generally been treated as a discrete entity seldom linked to performance (Miles and Snow, 1978), In fact, strategy is seldom viewed in its totality. Activities or components of educational strategy such as academic planning, faculty development, or resource allocation practices may form the basis of research, but few of these practices are analyzed in terms of their impact on institutional performance.

An institution's educational strategy should relate positively to student retention. However, empirical research on the influence of organizational practices on student retention is lacking in higher education research (Beal and Pascarella, 1982; Lenning, Beal, and Sauer, 1980). Although in-depth research exists testing the models of student characteristics and student academic and social integration and their relationships to student persistence, there is scant research on the role the institution plays through its educational strategy in supporting retention. After reviewing several business studies which used empirical data to examine the relationship of strategy to performance, Chaffee concluded that "managerial and organizational actions affect organization success. In other words, success is primarily due to controllable factors" (1985, p. 153). Thus, educational strategy may be instrumental in varying the institutional performance measure of student retention.

Institutional Characteristics, Student Retention, and Educational Strategy

Several researchers have found that the characteristics of institutional size, type, control, and selectivity are related to student retention (Astin, 1975; Beal and Noel, 1980; Burkhardt, 1986; Cope and Hannah, 1975; Kamens, 1971; Kohen, Nestel, Karmas, 1978; Lenning, 1982; Lenning, Beal, Sauer, 1980; Lenning, Sauer, Beal, 1980; Mauldin and Dunn, 1988; Miller, 1980; Pantages and Creedon, 1978; Ramist, 1981; Tinto, 1975). Findings are mixed for institutional size; some researchers reporting that size has no effect on retention; others that smaller institutions have higher retention rates; and others that larger institutions have higher retention rates. Results are more consistent for the relationship between student retention and the other three variables: four-year institutions have higher retention rates than two-year institutions; privately supported institutions have higher retentions rates than publicly supported institutions; and more selective institutions have higher retention rates than less selective institutions.

It is highly likely that these relatively fixed institutional characteristics are also related to educational strategy. As the nature of the institution changes, so must the strategy it follows to support teaching and learning. It is also proposed that these institutional characteristics influence the relationship between strategy and performance. In her review of empirical studies in the business arena, Chaffee found that the "relationship between strategy and success is complex and dependent on numerous contingencies" (1985, p. 153). These contingencies included the firm's size and diversification, the industry the firm was in, and its subgroup within the industry. Applying these contingencies to higher education institutions implies factors that define institutional subgroups; namely, size, type, control, and selectivity. With these institutional characteristics in mind, several questions emerge. Do larger institutions with more heterogeneous student bodies implement a broader array of practices to support undergraduate education? Do four-year private colleges focus more on student-oriented practices such as student support services? Does this lead to better retention? More selective institutions have been found to have better retention rates. Do their strategic patterns of practices differ from those of less selective institutions?

CONCEPTUAL FRAMEWORK AND RESEARCH DESIGN

The purpose of this study is to examine the relationships among educational strategy; the relatively fixed institutional characteristics of size, type, control, and selectivity; and student retention as represented in Figure 1.

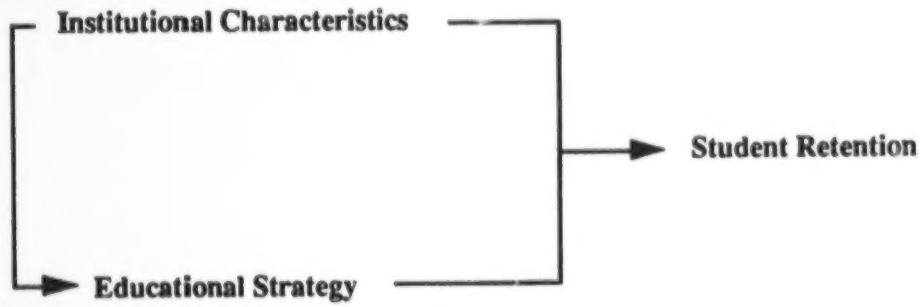

Figure 1. Conceptual Framework: The Relationships among Educational Strategy, Institutional Characteristics, and Student Retention.

Educational strategy is defined as patterns of practices engaged in by colleges and universities to support undergraduate education. Institutional characteristics included in the study are: size of undergraduate enrollment, institutional type (comprehensive or four-year), control (public or private), and selectivity of undergraduate admissions. Student retention is defined as the percentage of freshman students who continue on to their sophomore year at the same institution because "the first year hurdle is presumed to be the critical one in completing an undergraduate program" (Kohen, Nestel, and Karmas, 1978, p. 234).

Research Questions

The research questions implicit in the conceptual framework are as follows.

1. What are the patterns of practices of educational strategy? Do institutions seem to concentrate their efforts in one or two categories of strategy or implement a broad array of practices?
2. How do the institutional characteristics of size, type, control, and selectivity relate to educational strategy?

3. How does educational strategy relate to student retention? Is there a difference in the strengths of the relationships between the categories of educational strategy and student retention? If so, which is stronger? Does a broad array of practices across all categories relate to student retention more strongly than focus on one or two categories of strategy?

To address the three primary research questions, the following steps were taken. To examine the extent to which colleges and universities rely on institutional practices to support undergraduate teaching and learning, mean percentages for the categories of strategy were derived and examined. Bivariate analyses and multiple regressions were performed to study the relationships between the institutional characteristics and the categories of strategy, between the institutional characteristics and student retention, between educational strategy and student retention, and among the institutional characteristics, educational strategy, and student retention. When relationships of interest were discovered, further testing of various subsets of institutions were made.

From the literature review and from observations during the institutional visits, these hypotheses are suggested:

1. Educational strategy will not be strongly related to student retention at selective institutions especially private ones. Previous research has demonstrated that selectivity and control can explain a large percentage of the variance in student retention; that is, more selective and private colleges have higher retention rates.
2. Educational strategy will have more of an effect on student retention at less selective public institutions. These institutions have traditionally had lower retention rates than more selective private schools. From the visits to colleges and universities, it was observed that those institutions which concentrated their efforts in supporting undergraduate education through the implementation of a broad array of practices had the better retention rates.

Methodology

The sample for this study consisted of 528 higher education institutions; 301 four-year colleges and 227 comprehensive universities, which responded to the Academic Management Practices Survey (AMPS) for the Research Program on the Organizational Context for Teaching and Learning of the National Center for Research to Improve Postsecondary Teaching and Learning (NCRIPTAL). Community colleges were not included in the sample because it is believed that retention rates as measured in this study are not a valid assessment of institutional performance for this type of institution. In developing the AMPS three hundred "scholar-administrators" (campus chief executive officers who have published or given major presentations on improving undergraduate education) were asked in a brief open-ended questionnaire about the institutional practices that have positively affected undergraduate education. Their responses were grouped into 111 items for the AMPS which was then sent to chief academic officers at 1194 four-year and comprehensive institutions across the United States in the summer, 1987. The chief academic officers were asked to indicate whether a practice concerning undergraduate education existed or not at their institutions. The responses are represented as a dichotomous variable where 1=exist and 0=does not exist. Thus, the mean score on an item signifies the proportion of institutions that have the practice in place; in other words, a mean score of .65 indicates that 65% of the institutions have the practice.

To build the categories of educational strategy, ten higher education researchers unfamiliar with the AMPS were asked to put the 111 survey items into the four categories of strategy, Student-oriented Practices, Faculty-oriented Practices, Administrative Practices, and Curricular/Technological Practices. The categories were then tested empirically through inter-item reliability analysis. Some items were eliminated because they did not fit clearly into any one category. Another group of higher education researchers reviewed the practices in each category and agreed that the content was appropriate. Scores were then created for each institution in the study by counting the number of practices in place at the college for each category of strategy. For example, according to its responses on the AMPS, Midwest College (fictitious name) has

implemented three of the four practices that make up the category, Academic Planning. Therefore, for the category, Academic Planning, Midwest College received a score of 75%.

The content of the four categories of educational strategy is presented in Table 1.

Table 1

The Categories of Educational Strategy

Student-oriented Practices
- Student Support Services
- Student Academic Support Programs

Administrative Practices
- **Academic Planning**
- **Administrative Initiatives**
- **Institutional Research**
- **Academic Resource Allocations**
- **Admissions**
- **Assessment**

Faculty-oriented Practices
- Faculty Development
- Instructional Development
- Faculty Recruitment
- Faculty Selection
- Faculty Evaluation
- Faculty Promotion

Curricular/Technological Practices
- Program Development
- Program Discontinuance
- Program/Unit Review
- Technology Development
- Technology for Instruction

Because of the large number of items composing the category of Administrative Practices, each type of administrative practice, e.g. Academic Planning, is treated as a separate category in analysis.

Data on institutional characteristics and student retention were obtained from the College Board Annual Survey of Colleges, 1986-87 and supplemented, when necessary, with information from Barron's Profiles of American Colleges and Peterson's Guide to Four Year Colleges.

FINDINGS

Use of Educational Strategy

Figure 2 presents the categories of strategy and the mean percentage of practices that exist in each of the categories for the 528 institutions in the sample. A mean percentage of 73% in the category Student-oriented Practices indicates that the average college in the sample engages in 73%

of the practices that make up the category. All of the means except Assessment are above 57% indicating that the average institution in the study is engaging in a broad array of practices to support undergraduate education.

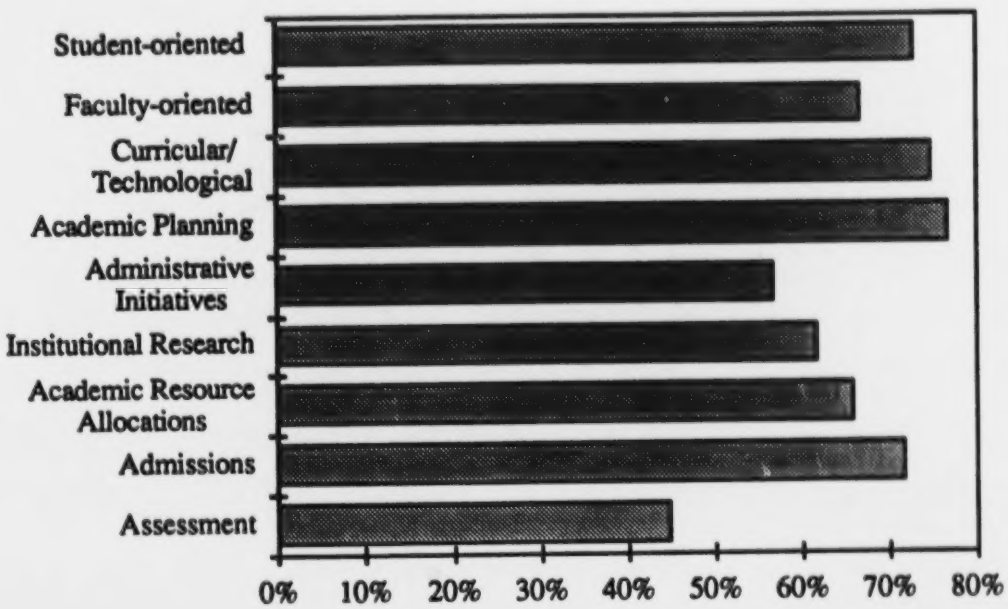

Figure 2. Mean Percentages of Practices Existing in Each Category of Educational Strategy.

The category with the highest mean is Academic Planning indicating that more than three-fourths of the Academic Planning practices are in place at the average institution. The next highest category is Curricular/Technological Practices followed by Student-oriented Practices. The colleges and universities in the study implement fewer practices related to Assessment than any other type of organizational endeavor. More than half of the items composing the Assessment category are concerned with outcomes testing, such as value added, rising junior, and graduation. Since this type of assessment is not yet wide-spread, it follows that the mean percentage for the 528 institutions is low.

Clearly, practices supporting undergraduate teaching and learning are used extensively by the institutions in this study. The most common practices involve planning to support

undergraduate education. These are closely followed by curricular/technological practices and programs and services involving and supporting students.

The Relationship between Institutional Characteristics and Educational Strategy

Findings indicate some significant differences in the use of the categories of educational strategy by institutional characteristics. These findings are summarized in Table 2. Comprehensive institutions engage in significantly more Student-oriented Practices, Curricular/Technological Practices, Academic Resource Allocation Practices, and Admissions Practices than do four-year institutions. Public institutions implement significantly more Curricular/Technological Practices and Academic Resource Allocation Practices than do private colleges. Larger institutions have significantly more Student-oriented Practices, Curricular/Technological Practices, and Academic Resource Allocation Practices than do smaller schools. And, more selective institutions engage in significantly more Student-oriented Practices and Academic Resource Allocation Practices than less selective colleges.

There could be many reasons for these differences. Large, public, and comprehensive institutions may need to implement more practices as a response to their larger more heterogeneous student bodies. More selective colleges may have more resources to put more practices in place. It should be noted that in spite of these differences among the groups of institutions, the majority of practices in eight of the nine categories of strategy are in place at the average institution in the study.

Table 2

Differing Use of the Categories of Educational Strategy by Institutional Characteristics

Institutional Characteristics	Category of Strategy Used Significantly More
Institutional Type	
Comprehensive	Student-oriented Practices Curricular/Technological Practices Academic Resource Allocations Admissions
Four-Year	None
Control	
Public	Curricular/Technological Practices Academic Resource Allocations
Private	None
Size	
Larger Institutions	Student-oriented Practices Curricular/Technological Practices Academic Resource Allocations
Smaller Institutions	None
Selectivity	
More Selective	Student-oriented Practices Academic Resource Allocations
Less Selective	Assessment

The Relationship between Institutional Characteristics and Student Retention

By far, the strongest relationships in this study were found between the institutional characteristics and student retention. This was to be expected given the findings in the body of research on student retention. As reported in previous studies, there are no clear directional links between institutional size and retention and institutional type and retention. In this study institutional type did not correlate at a significant level with retention. Size was not significantly correlated at the level (.01) which has been adopted for this study. However, the relationships between control and retention and selectivity and retention were strong with the latter being very powerful. The correlation between control and retention (.28) indicate that privately supported institutions have higher retention rates than publicly supported institutions, a result found in prior

research. The correlation between selectivity and retention (.63) also confirmed the findings in the literature that demonstrate that more selective institutions have higher retention rates than less selective ones.

In a multiple regression of all four institutional characteristics and retention, selectivity demonstrated its strong relationship to student retention. Selectivity alone contributed 40 percent to the variance in retention with control adding another 1.7 percent and size of undergraduate enrollment another 2.5 percent. Selectivity, control, and size combined to explain 44.2 percent in the variance in student retention.

The Relationship between Educational Strategy and Student Retention

Correlations between the categories of educational strategy and student retention revealed only three categories that related significantly: Student-oriented Practices, Academic Resource Allocations, and Assessment. However, in a multiple regression with these categories of strategy acting as the independent variables and student retention as the dependent variable, controlling on institutional characteristics, the categories of educational strategy were no longer found to contribute significantly to the variance in retention. The relationships of selectivity and control to student retention were so strong that they overwhelmed all others. This result was not surprising given the power of these institutional characteristic variables in explaining the variance in student retention. It was hypothesized that educational strategy would not have much of an effect on student retention at selective private institutions. Previous studies had demonstrated the strong influence selectivity and control have on retention. It was hoped that educational strategy would add something to the power of the independent variables in explaining retention. However, this was not the case.

It was also hypothesized that educational strategy might be more related to student retention at less selective public institutions whose retention rates are traditionally lower that those at selective private colleges. It had been observed that a broad array of practices to support undergraduate education were in place at less selective public institutions which had better retention

rates than their counterparts. To assess this hypothesis a set of additional analyses were undertaken, examining the relationships between the categories of strategy and retention under different groupings of selectivity and control. Some interesting patterns emerged.

A negative and significant correlation was found between Assessment and retention for selective public institutions and for highly selective private institutions. Academic Resource Allocation Practices have a significant relationship with retention for selective private institutions. However, the strongest patterns emerged for less selective public institutions. Table 3 presents the correlations for this particular group of institutions. Four categories of strategy, Faculty-oriented Practices, Curricular/Technological Practices, Institutional Research, and Academic Resource Allocations, showed a significant relationship to student retention. If the significance level is increased to .05, all categories of strategy except for Academic Planning and Assessment correlate significantly with student retention.

Table 3

Correlations between Strategy Categories and Student Retention for Less Selective Public Institutions (n=74)

Strategy Category	Student Retention
Student-Oriented Practices	.21
Faculty-Oriented Practices	.33*
Curricular/Technological Practices	.26*
Administrative Practices	
Academic Planning	.14
Administrative Initiatives	.22
Institutional Research	.28*
Academic Resource Allocations	.31*
Admissions	.24
Assessment	.11

*Correlation significant at .01 level.

To summarize the findings, educational strategy can be defined in a manner appropriate for higher education. The items from the Academic Management Practices Survey were placed into the categories of strategy which proved to be highly reliable and make clear conceptual sense. It was found that that the average college campus in the study has in place more than half of the practices in each of the categories of educational strategy (except Assessment) although there were some differences found among the types of institutions in their implementation of practices. Results demonstrated the tremendous power of the institutional characteristics variables of selectivity and control in explaining the variance in student retention. However, when the institutions were regrouped by selectivity and control, certain categories of educational strategy were found to be related to student retention for less selective public schools, providing support for the hypotheses.

DISCUSSION

The purpose of this study was to examine the role colleges and universities play through their educational strategy in retaining students. Three variable sets, institutional characteristics, educational strategy, and student retention, were defined and utilized to assess this role. The outcomes from the analyses of the relationships among these variable sets have resulted in key findings. These are presented below.

1. The concept of strategy can be defined in a manner appropriate for higher education institutions.

This study offered a unique approach to the concept of strategy. Strategy as patterns of practices deals with the outcomes of behavior and pursued actions, allowing the concept to become observable and measurable. Although the concept of strategy has been explored more thoroughly in the organizational behavior literature in the business arena than in the higher education literature, using this definition it can be operationalized in a manner appropriate for higher education institutions. Examining educational strategy as patterns of practices that support undergraduate teaching and learning permits institutions to gain a global picture of the activities in which they are engaged to sustain their primary mission. By studying an institution's educational strategy,

researchers and practitioners may come to a better understanding of the definition and meaning of strategy, learn about the range of available strategic options, and identify ways to conceptualize what their organizations are doing and might do (Chaffee, 1985).

2. Colleges and universities are engaged in an extensive array of institutional practices to support undergraduate education.

Most colleges and universities in this study are engaged in an extensive array of practices that support the educational process. The average institution in this sample uses more than fifty percent of the practices in eight of the nine categories of strategy. Academic Planning Practices, Curricular/Technological Practices, and Student-oriented Practices are implemented more by the institutions in this study than any other type. Only practices related to Student Assessment were reported as existing less than fifty percent of the time. Although a single institution may focus its efforts on any one of the categories of educational strategy in lieu of implementing a broad array of practices, it appears that most colleges and universities in this study believe that engaging in numerous practices at the institutional level may be most effective in supporting undergraduate education.

3. To some extent, as the nature of the institution changes so does its reliance on different categories of educational strategy.

Although all institutions have in common the primary mission of providing teaching and learning, the practices they use most to carry out this mission vary somewhat by institutional characteristics. It is interesting to note that comprehensive, public, larger, and more selective institutions have in place significantly more practices in several categories of educational strategy than four-year, private, smaller, and less selective schools. Perhaps certain institutional characteristics lead to the development of more practices to support larger more diverse student bodies. It is also interesting to note that the institutions did not differ in their use of practices in these categories of strategy: Faculty-oriented Practices, Academic Planning, Administrative Initiatives, and Institutional Research. In spite of these differences, institutional practices to

support undergraduate education are in wide-spread use by the colleges and universities in the study.

4. The relatively fixed institutional characteristics of selectivity and, to a lesser extent, control account for a large percentage of the variance in student retention.

This study demonstrated the tremendous power of the institutional characteristics of selectivity and control in explaining student retention. This finding was not surprising given the results of previous research studies. It was hoped that educational strategy would add to the explanation of the variance in student retention for all but the most selective private colleges. However, this was not the case. Educational strategy had no impact on student retention for the majority of the institutions in this study. Selectivity and control are fixed characteristics over which an institution has very little control. However, the institutional characteristics taken together left unexplained 55.8 percent of the variance in student retention. Perhaps part of the remaining variance will be found in future studies to be attributed to actions that higher education institutions can take, change, add to, manipulate, or throw out as they seek to improve the teaching and learning environment.

5. When the institutions in the study are regrouped by selectivity and control and the relationships between educational strategy and student retention are reassessed, some interesting patterns emerge.

As mentioned before, Chaffee found in her review of empirical studies of strategy in the business arena that the "relationship between strategy and success is complex and dependent on numerous contingencies" (1985 p. 153). It was hypothesized that these contingencies for higher education would include type, control, size, and selectivity of the institutions. In a fashion, the findings indicate support for this. Results demonstrated no relationship between educational strategy and student retention for the total study sample and a strong relationship between the independent variables of selectivity and control and the dependent variable. However, when the institutions were regrouped into six clusters by three levels of selectivity and the two types of control, new patterns emerged. Educational strategy and student retention still bore no relationship

for highly selective, selective, and private institutions. Yet, significant linkages were found for less selective public schools. In order to make it appropriate for higher education, Chaffee's statement could be rephrased that the relationship between strategy and success is complex and dependent on the institutional characteristics of selectivity and control. In fact, for this study group, the relationship between strategy and success exists only for less selective public institutions.

In essence, these findings are very encouraging. The institutional characteristics of selectivity and control lead to better retention rates for selective and private schools just because they are selective and private. Less selective public institutions must do something else to retain their students. The findings suggest that less selective public schools can do something about their low retention rates through the use of educational strategy. The correlations between certain categories of educational strategy and student retention were high for this group of schools especially the categories of Faculty-oriented Practices, Academic Resource Allocations, and Institutional Research. Faculty-oriented Practices emphasize faculty and instructional development and evidence of quality teaching required for faculty selection and promotion. Thus, focusing efforts on faculty improvement is related to better retention rates. Academic Resource Allocation Practices include such items as attracting external funds to improve undergraduate education, reviewing academic priorities in the budgeting process, linking budget allocations to academic plans, and regularly allocating funds for educational improvement. Thus, this result would suggest that it could be beneficial to focus resources early in the undergraduate experience on the improvement of the educational process. And, learning about the students, their characteristics, goals, and progress (i.e. Institutional Research) has also been shown to be related to better retention rates for this group.

6. Although educational strategy adds little to the predictability of retention in the total sample of institutions, it may be that it plays a critical role for those colleges and universities whose characteristics are related to low retention rates.

For less selective public institutions engaging in a broad array of practices that support undergraduate teaching and learning may counteract the low freshman-to-sophomore rate that would follow because they are less selective and public. This study has demonstrated that while the first year hurdle is easier for students at more selective institutions, less selective public schools can implement practices to lower the hurdle for their students. Examining educational strategy as patterns of practices that support undergraduate education provides a clear sense of organizational direction. Institutional practices established one by one converge into patterns. When these patterns are uncovered, they become manageable. Thus, the effective administrator becomes a pattern recognizer no less than a pattern planner, intentionally designing and implementing strategic moves that may enhance student retention and improve the teaching and learning environment.

In sum, this study supports the findings in the literature which indicate strong relationships between institutional characteristics and student retention. Results have demonstrated the tremendous power of the institutional characteristics of selectivity and control in explaining the variance in student retention. There is partial support for the conceptual framework that sees the effects of institutional characteristics as operating indirectly through strategy. The framework posits chains linking institutional characteristics to educational strategy and strategy to student retention. The findings suggest that the first chain does operate to some extent. The second chain; that is, the link between educational strategy and student retention, operates minimally for the total population. However, findings demonstrate that for those colleges and universities whose institutional characteristics would indicate problems with retention, the second chain may operate more strongly. For less selective public colleges and universities, engaging in a wide variety of practices that support undergraduate teaching and learning may lead to improved student retention rates.

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